

DOCUMENT RESUME

ED 179 924

CS 205 270

AUTHOR Rosse, James N.
 TITLE The Evolution of One-Newspaper Cities.
 PUB DATE Dec 78
 NOTE 68p.; Paper presented at the Federal Trade Commission Symposium on Media Concentration (Washington, D.C., December 14-15, 1978); For related documents, see CS 205 269-278

EDRS PRICE MF01/PC03 Plus Postage.
 DESCRIPTORS Audiences; *Competition; Economic Change; *Economic Research; Federal Legislation; *Industrial Structure; *Industry; Marketing; Mass Media; *Newspapers
 IDENTIFIERS *Advertising; Monopoly; Ownership

ABSTRACT

This is one of several papers presented at a Federal Trade Commission Symposium on Media Concentration. It analyzes trends in the development of one-newspaper cities. Some of the trends noted are that face-to-face competition has declined considerably over the last five decades, going from 90% of the circulation in 1923 to 30% of the circulation in 1973; average daily circulation per firm has grown from about 15,000 to 40,000 during this period; and large cities are more likely to have directly competitive newspapers than are small cities. Questions of why direct newspaper competition has declined so dramatically over time, why competition is less common or practically nonexistent in smaller towns, and whether past trends are likely to continue into the future are considered. Differentiated products, market segmentation, and economies of scale are discussed as they relate to these trends. The interrelatedness of advertising and subscription markets is also considered. (NMH)

 * Reproductions supplied by EDRS are the best that can be made *
 * from the original document. *

Draft
November, 1978

THE EVOLUTION OF ONE-NEWSPAPER CITIES

by

James N. Rosse*

Please do not quote or
cite without permission

Discussion Draft
Prepared for

The FTC Media Symposium
December 14, 15, 1978
Washington, D. C.

"PERMISSION TO REPRODUCE THIS
MATERIAL HAS BEEN GRANTED BY

James N. Rosse

*Department of Economics
Stanford University
Stanford, California
94305

TO THE EDUCATIONAL RESOURCES
INFORMATION CENTER (ERIC)."

I. The Decline of Direct Newspaper Competition

The structure of competition in media markets is complex and involves many actors besides newspapers. TV, magazines, radio, weekly newspapers, direct mail advertising, and other forms of mass media compete for the newspaper's readers' attention and for its advertiser dollars. Even competition just among daily newspapers is not easy to characterize when one takes into account competition between dailies located in different sized cities, as between metropolitan and suburban cities, for instance.

However, there is a form of newspaper competition that is quite easy to identify. That is the face-to-face competition of newspapers of general appeal located in and identified with a single city. Manhattan has the Times, the Daily News, and the Post, for instance, while Chicago has the Tribune and the Sun-Times, and Washington, D.C. has the Post and Star. These are examples of what I mean by direct newspaper competition--independently owned and operated firms separately producing daily newspapers that actively compete with one another for general audience reader attention and for all types of advertiser dollars. This is what most people mean when they refer to newspaper competition, and it is the kind of newspaper competition with which the discussion of this paper concerns itself.

There are a large number of newspaper firms in the United States, about 1,580 firms producing over 1,700 newspapers. But these numbers are subject to considerable ambiguity of definition. It would be wise to lay down more explicitly what I mean by a newspaper firm.

Table 1
Newspaper Competition, 1978

U. S. Cities With:	Number	Percent of Total
General Circulation Daily Newspapers	1,536	100%
More Than One Fully Competitive Newspaper	35	2.3
Agency Shop Newspapers	21	1.4
Either Competitive or Agency Shop Papers	56	3.6

Competitive Newspaper Cities:

Arkansas,	Little Rock	New Jersey,	Trenton
California,	Los Angeles	New York,	Buffalo
	Sacramento		New York
Colorado,	Colorado Springs	Ohio,	Cincinnati
	Denver		Cleveland
Connecticut,	Manchester	Oklahoma,	McAlester
District of			Oklahoma City
Columbia,	Washington	Pennsylvania,	Philadelphia
Illinois,	Champaign-Urbana		Scranton
	Chicago		York
Louisiana,	Slidel	Tennessee,	Chattanooga
Maryland,	Baltimore		Cookeville
Massachusetts,	Boston	Texas,	Austin
Michigan,	Detroit		Dallas
Missouri,	Columbia		Houston
	Fulton		San Antonio
	St. Louis*	Washington,	Seattle
Nevada,	Las Vegas	Wisconsin,	Green Bay

Agency Shop Cities

Alabama,	Birmingham	New Mexico,	Albuquerque
Alaska,	Anchorage	Ohio,	Columbus
Arizona,	Tucson	Oklahoma,	Tulsa
California,	San Francisco	Pennsylvania,	Pittsburg
Florida,	Miami	Tennessee,	Knoxville
Hawaii,	Honolulu	Tennessee,	Nashville
Indiana,	Fort Wayne	Texas,	El Paso
Indiana,	Evansville	Utah,	Salt Lake City
Louisiana	Shreveport	West Virginia,	Charleston
Nebraska,	Lincoln	Wisconsin,	Madison
		Washington,	Spokane

Source: 1978 Editor and Publisher Yearbook. Only general circulation newspapers published five or more days per week are included.

* The St. Louis papers have a common printing plant but apparently sell all advertising and circulation independently; the city is sometimes classified as an agency shop city.

Enterprises with separately owned and produced editorial products but joint mechanical production and joint sale of advertising and subscriptions are called agency shops if the editorial products have the same city of publication identification. For present purposes, agency shop newspapers are regarded as a single firm, as are morning and evening editions jointly owned and produced by a single corporate entity, even though the former are always considered separate newspapers and the latter often are. At the other extreme, jointly owned and produced newspapers, such as those found in small towns, are counted as separate firms if they have separate editorial identities and if their subscriptions and advertising space can be purchased separately. These distinctions are motivated by the fact that the newspaper's principal competitive arena is local in character, and by the need to identify independent economic actors in those local markets.

There are 1,536 U.S. cities that have daily newspapers but, at the end of 1977, only 35 had directly competitive dailies. Even if one includes cities with agency shop newspapers, only 3.6% of the cities with dailies have anything like direct newspaper competition; excluding agency shop cities drops the percentage to 2.3%. One can hardly say that face-to-face newspaper competition is commonplace!

Not only is newspaper competition not commonplace, it is diminishing. Recent legal actions or news stories suggest that face-to-face competition is in danger in at least Sacramento, Washington, D.C., Cincinnati, and Cleveland, and newspapers in others of the 35 cities may be in less publicized trouble.

Table 2

DECLINE IN MULTIPLE NEWSPAPER CITIES
IN THE UNITED STATES
1923-1978

<u>Year</u>	<u>Total Cities With Newspapers</u>	<u>Cities Having More Than One Paper</u>	
		<u>Number</u>	<u>% of Total</u>
1923	1297	502	38.7
1933	1426	243	17.0
1943	1416	137	19.7
1948	1392	109	7.8
1953	1453	91	6.3
1958	1447	70	4.8
1963	1476	51	3.5
1968	1493	43	2.9
1973	1519	37	2.4
1978	1536	35	2.3

Sources: Kosse, Owen, Dertouzos, "Trends in the Daily Newspaper Industry," Studies in Industry Economics #57, Stanford University, 1975.

1978 Editor and Publisher Yearbook

It has not always been so. Today, less than a third of total daily circulation originates in multi-firm cities while in 1953, more than half did. If we go back to 1923, nearly 90% of U.S. daily circulation originated in directly competitive cities. In other words, there was only one chance in nine that a paper you would have subscribed to in 1923 failed to have face-to-face competition, while the odds rose to more than two out of three in 1978.

Of course, the odds of finding competitive newspapers have always been greater in large cities than in small. Even in 1978, there were still seven cities out of twenty-four in the 200 to 500 thousand household range that had directly competitive dailies, and all of the largest cities--New York, Chicago, Los Angeles, and Philadelphia--contained competitive newspapers. At the other extreme, only a small fraction of the smallest newspaper cities contained competitive dailies even in 1923. Thus, although nearly 90% of circulation originated in competitive cities in 1923, only 39% of newspaper cities were competitive. The comparable figures for 1978 are less than one-third and 2.3%.

Two patterns have emerged. Firstly, larger cities are more likely to have directly competitive newspapers than are small cities. Secondly, the likelihood of face-to-face competition has declined substantially over at least the last five and a half decades. One way of describing these trends is by means of probit estimates.

Table 3

PROBIT ESTIMATES:
ESTIMATED PROBABILITY THAT A WEEKDAY*
NEWSPAPER HAS FACE-TO-FACE COMPETITION,
BY SIZE OF CITY, 1948-1973

Year of Estimate	Population of City				
	10,000	50,000	100,000	500,000	1,000,000
1948	3%	27%	48%	89%	96%
1958	1	14	29	76	89
1968	0	4	12	55	75
1973	0	3	10	52	74

Source: Calculated using probit estimates reported in "A Description of Competition in the Newspaper Industry: A Probability Analysis," by James N. Dertouzos, Studies in Industry Economics Discussion Paper #68, Department of Economics, Stanford University.

* Weekday means five or six weekday editions with no Sunday edition.

Probit estimation is a statistical technique designed to take account of the fact that the variable to be "explained" or described can take on only two possible values. Thus, a given city either does or does not contain competitive newspapers. In the former case, we could say that newspapers located in the city were competitive "with probability one" or "with probability zero" in the latter case. However, if we were to look at a large number of cities of similar size, we would find that some fraction were competitive. What probit estimation permits us to do is to estimate that fraction in a systematic way.

Probit estimation is like ordinary regression analysis in that it permits the use of multiple "explanatory" variables to improve its descriptive power. Thus, in the analyses reported in Tables 3-5, either city size or newspaper circulation size was a crucial describing variable. Publication schedule of the newspaper in question was a second variable peculiar to the firm. The third variable was the simple passage of time. The available data set did not permit a richer set of "explanatory" variables, but the set at hand is sufficient to our purposes here.

Tables 3 and 5 amply illustrate the two patterns referred to above. To interpret Table 3, a hypothetical five or six weekday publishing newspaper had only a 3% chance of being faced with direct newspaper competition in 1948 if it were located in a city of 10,000 population. However, those odds increase to 48% for a city of 100,000, and to 96% for a city of one million. This establishes the cross-section

Table 4
 PROBIT ESTIMATES:
 ESTIMATED PROBABILITY THAT A NEWSPAPER
 LOCATED IN A CITY OF 500,000 POPULATION
 HAS FACE-TO-FACE COMPETITION,
 BY PUBLICATION SCHEDULE, 1948-1973

<u>Year of Estimate</u>	<u>Publication Schedule</u>		
	<u>Morning or Evening Weekday Only</u>	<u>Morning or Evening and Sunday</u>	<u>Morning and Evening and Sunday</u>
1948	89%	91%	54%
1958	76	80	34
1968	55	72	19
1973	52	67	15

Source: See Table 3.

trend; larger cities are much more likely to have competitive dailies. At the same time, by comparing the probit estimates for the years 1948 through 1973, the time-series trend is evident; holding size of city constant, the probability that our hypothetical newspaper would have direct competition has declined strikingly since 1948.

Table 4 shows that if the hypothetical newspaper had published morning, evening, and Sunday editions, then the probability of its having competition would be dramatically less. As a matter of description, this is hardly surprising; the most common mode for the disappearance of competition has been for formerly independent newspapers to merge into a single morning, evening and Sunday scheduled firm, either agency shop or jointly owned. On the other hand, papers publishing once daily including Sunday are slightly more likely to be competitive than was our hypothetical firm; this is not surprising since both the likelihood of competition and the likelihood of shifting from a 5 or 6 weekday schedule to a 7 day schedule increase as one moves to larger city sizes.

The data set used to generate the probit estimates of Tables 3 and 4 did not extend prior to 1948. However, by substituting circulation of the paper in question for the size of its city of location as a describing variable, the estimates could be extended back into the 1920s. Table 5 reports these probit estimates. They show the same patterns even more dramatically since the time span is longer. They also show, among smaller newspapers, that the most dramatic changes in direct newspaper competition took place in the pre-World War II era.

Table 5
PROBIT ESTIMATES:
ESTIMATED PROBABILITY THAT A WEEKDAY
NEWSPAPER HAS FACE-TO-FACE COMPETITION,
BY SIZE OF DAILY CIRCULATION, 1925-1975

Year of Estimate	Daily Circulation				
	5,000	10,000	50,000	100,000	500,000
1925	40%	55%	85%	92%	99%
1935	21	35	71	83	97
1945	9	18	53	69	93
1955	3	7	34	52	86
1965	1	2	19	34	75
1975	0	1	9	19	60

Source: See Table 3.

Table 6
NEWSPAPER COMPETITION IN
LARGER U.S. METROPOLITAN AREAS*

<u>City</u>	<u>Single Firm</u>	<u>Agency Firm</u>	<u>Competitive Firms</u>
Birmingham		x	
Phoenix	x		
Long Beach	x		
San Diego			x
San Francisco		x	
San Jose	x		
Denver			x
Indianapolis	x		
Louisville	x		
New Orleans	x		
Kansas City	x		
Newark	x		
Buffalo			x
Rochester	x		
Cincinnati			x
Columbus		x	
Portland	x		
Memphis	x		
Dallas			x
Fort Worth	x		
San Antonio			x
Norfolk	x		
Seattle			x
Milwaukee	x		
	14	3	7

* All U.S. cities with 200 to 500 thousand households in ABC defined city zones.

Source: Editor and Publisher.

Among larger papers, the decline in competition was more dramatic in the post-World War II time period.

The long time span from 1923 to 1978 also saw a dramatic change in the size of an average newspaper. In 1923, half of all daily newspaper firms had circulation of less than four thousand as compared to about twelve thousand daily for the median firm in 1978. Average daily circulation per firm grew from about fifteen thousand to nearly forty thousand. Even forty thousand sounds like a small newspaper to most of us because of the disproportionate importance of large city newspapers. Also, it is this phenomenon that accounts for the fact that mean circulation is so much larger than median circulation.

The increase in mean and median size of the newspaper firm has been accompanied by an increase in the minimum viable size of firm. At the same time, at least in the post-World War II period, the largest size newspapers have not grown so fast.

This brief review of trends in the daily newspaper industry sets the stage for the questions I want to address in this paper:

- Why has direct newspaper competition declined so dramatically over time?
- Why is such competition less common (practically non-existent) in smaller towns?
- Are past trends likely to continue into the future?
- What policy options are likely to foster more direct newspaper competition?

II. Differentiated Products, Market Segmentation, and Economies of Scale

In this section, and in Section III following, I will lay down some of the basic economic considerations needed to understand why the evolution of one-newspaper cities has proceeded as it has.

In brief preview of this section, we will find that economies of scale in newspaper production lie at the heart of the matter. The existence of product differentiation flows as a logical consequence from the presence of economies of scale, and the phenomenon of market segmentation arises as a result. Section III will explore the inter-relatedness of advertising and subscription markets.

A. Economies of Scale in Newspapers

The presence of economies of scale in production is usually described as a situation in which one enterprise can supply a market at lower cost than can more than one.* It is much too easy to invoke economies of scale to explain almost any imperfection in market organization, so we will want to approach the question rather carefully. Also, the fact that newspaper products have two quantity dimensions, the quantity of space published per copy for one and the number of copies produced for the other, means that one must be careful about how he applies and interprets the concept of economies of scale.

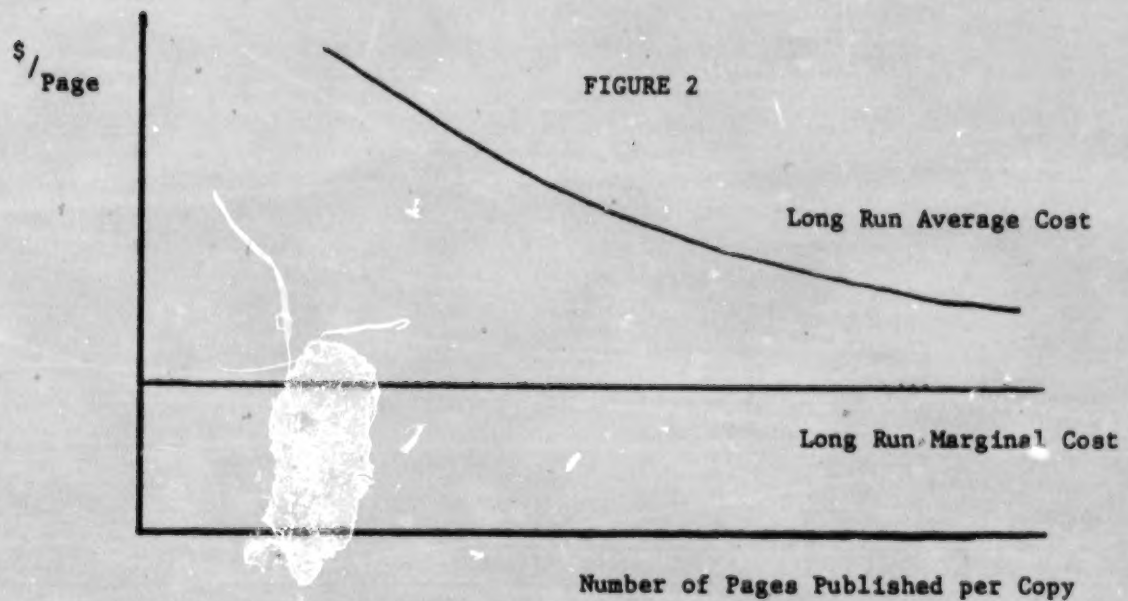
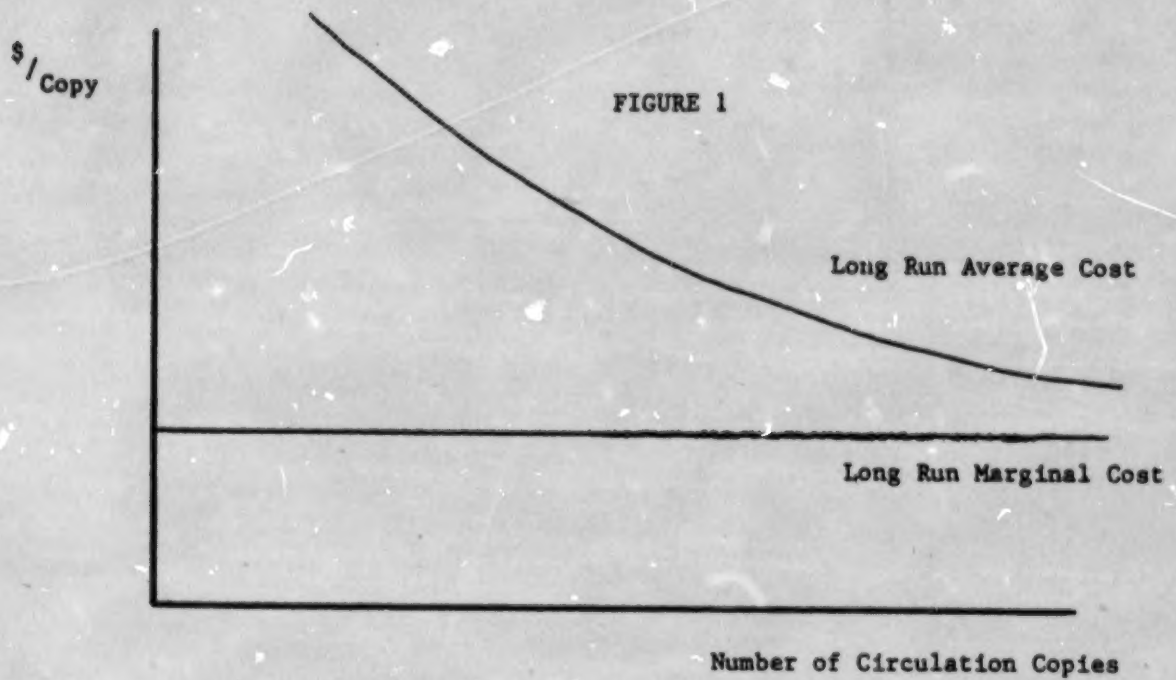
Actually, the presence of two quantity dimensions in newspapers provides an easy way to see where relevant economies of scale

* Strictly speaking, this is the characterization of subadditive costs rather than economies of scale. See W. J. Baumol, "On the Proper Cost Tests for Natural Monopoly in a Multi-product Industry," American Economic Review, December 1977. The distinction will not be important for present purposes.

arise. For instance, let us first hold constant the number of pages produced per copy, holding fixed whatever mix of advertising and news-feature content happens to occur. If we also ignore the costs of selling additional copies as we properly should when examining production costs, it is quite reasonable to presume that the marginal cost of additional copies is about constant as a function of the number of copies produced. The marginal cost we are concerned with is, of course, the long-run marginal cost of producing an additional newspaper copy daily. Such a constant marginal cost curve has been portrayed in Figure 1.

To argue the constancy of the marginal cost curve portrayed, we note that, since the quantity of space per issue is held constant (as are other "quality" dimensions of the product) and since selling costs (including distribution) are held fixed as well, then the variable costs involved are mainly press room labor and equipment, newsprint, and paper handling both into and out of the press room. More than half of the relevant marginal cost is for newsprint alone, and equipment and processes used are fairly finely divisible so there is little reason to expect other than approximately constant long run marginal cost per circulation copy in the experimental circumstances developed here.*

* Empirical evidence and more technical discussion of these matters can be found in my articles "Daily Newspapers, Monopolistic Competition, and Economies of Scale," American Economics Review May 1967, and "Estimating Cost Function Parameters Without Using Cost Data," Econometrica, March, 1970.



However, although we have presumed constant marginal costs of producing circulation copies, we must note immediately that it costs something to create the newspaper content that is being reproduced. That is, even though we are holding constant the amount of space published per copy of the paper, we cannot ignore the fact that the cost of creating the content to fill that space is non-trivial. Such costs are some times called "first issue" costs to reflect the fact that they must be incurred before even one copy can be reproduced but that they do not vary with the length of press run thereafter, at least as long as we ignore selling costs.

Included in first issue costs are the news gathering, purchasing, and editing costs incurred to produce the paper's news-feature content; the costs of selling and laying out the advertising content for publication; and the costs of typesetting, page make-up, and printing plate preparation. For a smaller circulation daily, first issue costs may account for 40% or more of publishing revenue by the time one takes into account all of the direct and investment costs incurred.

Since first issue costs do not vary with the number of circulation copies in the conceptual experiment developed here, those costs must be treated as fixed costs with respect to variation in the number of circulation copies produced. Since first issue costs are substantial relative to the costs of producing circulation copies, they have the effect of inducing a significantly declining long-run average cost curve as displayed in figure 1. This amortization of first issue costs over the

size of circulation, I will now argue, constitutes an important form of economies of scale in newspapers.

The argument goes as follows: Suppose we have a newspaper with no advertising but whose costs behave as depicted in figure 1. Clearly, holding product quality and desirability characteristics constant and ignoring selling and distribution costs, one firm can always supply all of the readers that want that particular product at lower costs than can two or more firms producing identical products. Consequently, in the circumstances described, we would think it unlikely that more than one firm could survive supplying circulation copies to the market in the long run.

As a side light, we note that in these circumstances, the only range left for the introduction of competition is in the development of different, non-identical products. Thus, we see that the possibility of competition among differentiated products flows directly from the presence of economies of scale.

Returning to the main argument, now suppose we admit the possibility of advertising. Under the rules of our experiment, we must hold the quantity of advertising space fixed. However, we must recognize that advertisers pay not for space in the paper but for exposure to prospective buyers of the advertised product. Thus, one would expect advertising revenue for our experimental firm to increase as the size of circulation is increased. This would be true in spite of the fact that the first issue cost of creating the advertising content remains

constant. Thus, as long as added audiences are valuable to advertisers, we would expect the presence of advertising to accentuate the economies of scale phenomena that we discovered above.

Hence, with or without the effects of advertising, we would expect that the presence of a declining long-run average cost of circulation copies would be a bar to the presence of multiple suppliers of identical products, and would militate against the presence of multiple suppliers even with product differentiation.

It is easy to repeat the argument in the newspaper firm's second quantity dimension; just as it sells daily circulation copies to readers, it sells space to advertisers. We now want to hold constant the firm's circulation and examine the way in which production costs behave as the number of published pages varies. It is reasonable to suppose that the marginal cost of added space per issue is approximately constant, again, neglecting selling costs. Such a constant marginal cost curve is depicted in figure 2.

The reasons for expecting constant marginal costs are similar to those given before. An important part of the cost is simply the added newsprint that needs to be used for the additional pages; newsprint cost per added page must be exactly constant as the number of pages is increased. There may in fact be some economies of specialization in typesetting processes as the number of pages is expanded. The divisibility of typesetting and press equipment again leads us to expect that marginal costs should be approximately constant in the long run.

As before, there are substantial costs that must be treated as fixed as the quantity of space published per issue is varied. Chief among these are the costs of developing and maintaining home delivery and street sales circulation, costs that can run as high as ten to fifteen percent of publishing revenue. As before, the existence of substantial costs that are fixed relative to the quantity variable in question gives rise to a long run declining average cost curve as depicted in figure 2.

At this point, there are two cases of interest. In case 1, the news-feature space provided to (sufficient to attract) a given circulation audience is held constant. This becomes an added fixed cost relative to the variable cost of supplying advertising space. Including newsprint cost, it could amount to an additional 35% or more of publishing revenue, certainly a substantial amount. The effect on the average cost curve in figure 2 would be to shift it upwards and to make its slopes steeper for any given quantity of advertising space as measured on the lower axis. Thus, the fact that some of the space in the paper is used to attract and hold reading audiences increases the extent of scale economies relevant to advertising markets. This completes case 1.

In case 2, we hold the amount of published advertising space constant, but vary the quantity of news-feature space. Again, we expect to find declining average costs per space, as depicted in figure 2. The effect of this is that one newspaper can produce both a women's section and a sports section in its paper more cheaply than could two papers producing women's and sports dailies separately. More generally,

the presence of substantial fixed costs relative to the space dimension means that newspapers providing many kinds of reader interest content are likely to have cost advantages over separate firms producing specialized reader interest products.

Thus, we find that the presence of declining long-run average cost for space militates against directly competing newspaper firms in both advertiser and subscriber markets.

I have neglected selling costs up to this point. The principal selling cost incurred by a newspaper, aside from the cost of creating its news-feature product, is the establishment and maintenance of home delivery and street sales circulation. For most newspapers, home delivery is overwhelmingly more important than street sales. It is clear that the cost of delivery per subscriber varies inversely with the density of subscribers per unit of area, everything else constant; denser subscriber markets mean lower transportation costs and more efficient utilization of distribution personnel and equipment. Hence, as long as circulation agencies cannot be shared, two newspapers delivering in the same circulation zone will always have higher unit costs than one would. As I will discuss below, the Albrecht decision of the Supreme Court and subsequent litigation based on that precedent virtually guarantee that circulation systems will not be shared by competing newspapers.

Other kinds of selling costs consist of tailoring the newspaper product to fit product preferences of advertising and reading customers.

It is hard to see how the presence of these kinds of costs can do other than militate against the presence of directly competing newspapers, as in the case of delivery costs.

Consequently, there are powerful a priori arguments (as well as empirical evidence) that lead us to expect economies of scale in each quantity dimension of the newspaper firm's product, as well as because of the presence of selling and delivery costs. In each of these three phenomena, we find powerful economic forces working against the development of competitive newspaper markets. Does this mean that we should never expect to find newspapers competing in the marketplace? or that the presence of directly competing newspapers is an aberration that time will surely eliminate?

The answer to both of these questions is no, but with qualification. Before we can answer, we need to understand better the interaction of differentiation and market segmentation phenomena with economies of scale.

B. Product Differentiation and Market Segmentation

Given the existence of scale economies and taking a longer run view, one would expect it to be the exception rather than the rule that newspapers would compete directly with one another for the same audience. In other words, one would expect audience segmentation to take place.

The phenomenon of audience segmentation can be most clearly seen in England where the London based national press has segmented the audience into highbrow, middlebrow, and lowbrow audiences. With respect to each audience segment, a dominant newspaper has emerged--a monopolist with respect to each audience segment, if you prefer that language. A dominant firm attains its dominance by producing a most preferred product for its audience segment. Competition for audience among such newspapers takes place at the fringes of their respective audiences where reader preferences for one or another kind of newspaper are less produced. (Needless to say, this description of the English press is considerably over simplified in order to highlight the market segmentation phenomenon.)

Audience segmentation occurs because of the existence of economies of scale. Economic competition between two newspapers seeking to serve the same audience segment with similarly oriented products cannot survive in the long haul. Eventually one or the other will obtain sufficient scale relative to the other so that it can underprice in advertising markets. Most often merger rather than bankruptcy has taken place in these circumstances.

Thus, survival of newspaper firms depends on each being able to whittle out a profitable audience segment. What amounts to the same thing, each must find a product image (or, equivalently, an editorial package or a differentiated product) which uniquely appeals to a sufficiently large audience segment to make survival possible.

In the United States, the good example of newspaper audience segmentation across reader interests exists in New York City. The Times, the Daily News, and the Wall Street Journal (no longer regarded as primarily a New York publication) all produce morning newspapers, all are radically different from one another, and each appeals to segmented audience tastes and interests.

The most important segmentation of audience by American newspapers does not take place across the kinds of reader interests and tastes typified by the New York and the English national press examples, however. In advertising markets, the comparative advantage of newspapers vis-a-vis other media lies in high density localized distribution. Relative to other media, a newspaper is most cost effective when it is able to deliver a large percentage of the potential audience in its localized market. As a result, segmentation of audience by the American press is almost exclusively on the basis of location, of local community interest. This is the most profitable kind of audience it can sell to advertisers in competition with other media. American newspapers have always been strongly oriented to their local communities--both audience and advertising communities--but the rapid evolution of other media in recent years has greatly reinforced that orientation.

With very few exceptions, then, the American press is a local press, much like the provincial press of England. The importance of a given newspaper derives not so much from what it does itself, but where it happens to be located. The San Francisco Chronicle and Examiner happen to be more influential and important than the Palo Alto Times or the San Jose Mercury-News because they are located at the center of a larger local community than are the others. Because San Francisco is a larger community, they have larger circulation. Because of scale economies (and the economies of joint morning-evening operation in this case), they have lower per unit costs. Because of lower unit costs, it is profitable for them to extend the range of their circulation more broadly, devoting more resources to developing an appealing editorial package than is profitable for the smaller newspapers. Hence, the happenstance of location at the center of a metropolitan community gives the Chronicle and Examiner importance in a broader regional community, but a community differentiated by location nevertheless.

One has little difficulty seeing that the Oakland Tribune, the San Jose Mercury-News, the San Raphael Independent-Journal, the Palo Alto Times, the Hayward Daily Review, and other Bay area newspapers are differentiated from one another primarily by their locations, and that segmentation of audiences is by local community. But the same principles are at work more generally. The Los Angeles Times, the Chicago Tribune, the Washington Post, and the New York Times are primarily local media. The principal difference between them and the Palo Alto Times is the size and importance of the local community in which each happens to be located.

It should be clear from the above discussion that market segmentation and product differentiation are simply flip sides of the same coin. Each newspaper develops the audience segment for which it has an advantage relative to other newspapers and other media by differentiating its product to appeal uniquely to that audience.

A rather artificial, but, nevertheless, insightful example of a local newspaper market can be developed to illustrate the interaction of economies of scale and product differentiation in both advertiser and reader markets to yield market segmentation. The example also shows how multiple newspapers could survive in local markets in spite of scale economies.

The local community we want to examine consists of just four households, two grocery stores, and from one to four local newspapers. The four households live on the North-East, South-East, South-West, and North-West corners of town.

The Eastsiders and Westsiders have distinct reading preferences; the two Eastsiders care to read only comic strips while the Westsiders will read only book reviews. Eastsiders are indifferent among paying 5¢ a copy for newspapers having one page of comics, paying 4¢ a copy for a newspaper with a half page of comics, and paying nothing for no newspaper. Similarly, Westsiders will pay 5¢ a copy for newspapers with a full page of book reviews, are willing to pay 4¢ for a newspaper with half a page of book reviews, but would be equally well satisfied to receive no paper and pay nothing.

The two grocery stores are on the North and South sides of town, respectively. The Northside store is only interested in reaching Northside residents. It will buy a full page advertisement in each newspaper that reaches Northside residents, and will pay 5¢ per page per Northside reader for that space. The Southside store is symmetric; it will buy a full page advertisement in each newspaper that reaches Southside residents, and will pay 5¢ per page per Southside reader for that space.

Newspaper technology is quite simple. A paper may publish one or two pages of news-features, one or two pages of advertising, and print one to four copies (we will ignore the fact that odd numbers of pages are infeasible). The production choice of a newspaper can be represented by (N,A,C) where N is the number of news-feature pages, A is the number of advertising pages, and C is the number of copies produced per daily issue. The dependence of a firm's costs on its production choice is represented by the cost function $c(N,A,C)$. Hence $c(2,1,2)$ represents the cost of producing a paper with two pages of news-features and one page of advertising for two readers.

The above completely describes subscriber and advertiser demands and the technological alternatives of the newspaper firms. What is not yet determined is the number of local newspapers; that will depend on economies of scale as represented in the cost function.

Suppose, initially, that there are four newspapers in the community, a Gazette for each corner of town. Each publishes one page each of news-feature and advertising content, and sells just one copy. Each household subscribes to only one of the papers, and gets exactly the news-feature content it prefers. The paper read by the household contains the grocery advertising from the grocery store that wants to reach that audience. Newspaper products are perfectly differentiated both for subscribers and for advertisers. For the production choices $(1,1,1)$, each newspaper receives 10¢ in publishing revenue per issue. Assume that each newspaper just breaks even so that $c(1,1,1)$ is equal to 10¢.

But suppose that newspaper costs behave in such a way that $c(1,1,2) < 18¢$. If so, an outsider could profitably buy up the Northside firms (or the Southside firms), replace the two newspapers with one which published the Northside (or the Southside) grocery store's ads, printed a half page each of comics and book reviews, and charged the subscription price of 4¢ per copy and an advertising price of 10¢ per page. With a free market, one would expect the initial four firms to be replaced by two, a Northside Gazette and a Southside Gazette; revenues of each would be 18¢, and costs would be less than 18¢.

As a second possibility, suppose that newspaper production costs were $c(1,2,2) < 20¢$. In this case, an outsider could profitably buy up the Eastside (or the Westside) newspapers and publish a single newspaper containing both the Northside and Southside grocery ads and one page of comics (or book reviews). Again, a two firm industry structure would result

with Eastside and Westside Gazettes. Each newspaper would be printing two pages of advertising, charging 5¢ per page since each grocery store would be buying circulation that it did not want. The two Eastside (or Westside) households would pay 5¢ each for a subscription since the paper each receives has a full page of the preferred content.

As a third possibility, there are again two newspapers, the Northside and Southside Gazettes. The production choice of each is (2,1,2), one page each of comics and book reviews, one page of advertising, and a circulation of two. Each has an Eastside and Westside subscriber for circulation revenue of 10¢. In each case the grocery store will pay 10¢ for its page of advertising since each paper's circulation is fully effective to its advertiser. Each newspaper will have 20¢ of publishing revenue; if $c(2,1,2) < 20¢$, this two firm industry structure could obtain.

Fourth and fifth possibilities each lead to a single firm industry. If $c(1,2,4) < 36¢$, an outsider could profitably replace all four firms with one whose product contained both the Northside and the Southside ads and a half page each of book reviews and comics. Finally if $c(2,2,4) < 40¢$, a single firm could profitably print a paper containing both ads and a page of each content, and be circulated to all four households.

This example illustrates the way in which segmentation of audience according to buyer preferences can be expected to depend on relative prices; for sufficiently great price differentials, one or more of the segmentations may become inoperative.

Continued existence of the initial industry structure, where newspaper products were "tailor-made" in the sense that both advertisers and subscribers received exactly the differentiated product that they preferred and no more, would require denial of all five cases considered. That is, costs would have to exceed revenues in each case where fewer than four firms were found. Otherwise, fewer than four firms will result and some compromise from a "tailor-made" set of newspaper products will take place; either each household will receive some news-feature content that it does not plan to read, or else each advertiser will be purchasing some circulation exposure that it does not want, or else both may occur. In each of the five cases where the initial four firm industry structure was disturbed, cost per subscriber declined.

Simple as this model is, it illustrates a number of important principles:

First, the customers that a newspaper serves are determined by the product choices that it makes. This is what is meant by product differentiation. The key differentiation decision is clearly deciding what reader group to serve, but advertising considerations are important as well.

Second, newspapers do not "compete" within audiences. Rather, by differentiating their products, newspapers appeal to different audience groups. This is what is meant by audience segmentation.

Third, it is clear that both economies of scale and market segmentation are important in determining the number of newspapers in a community. If advertisers all want to reach all of the audience and if there are no

distinctions among readers in the news-feature product that they prefer, then economies of scale will compel a single newspaper community. Consider, for example, the implications of the Northside and Southside grocery stores being merged into a single chain. Alternatively, suppose that Eastside and Westside households each discovered that book reviews and comics, respectively, made interesting reading in addition to their initial preferences. It would then take very little in the way of economies of scale to generate a two or one newspaper community. Alternatively, if advertiser or reader preferences for differentiated products are sufficiently strong, it is clear that fairly pronounced economies of scale may not be sufficient to disturb an initial multiple newspaper equilibrium.

As a fourth and final comment, some insight is now available as to why large cities are more likely to contain directly competing newspapers than are small ones. Since declining average costs, as found in scale economies, cannot become negative, they must decline at a decreasing rate as one moves from smaller to larger circulation. Comparing, for instance, two newspapers of 25,000 circulation with one of 50,000, the difference in average cost per subscriber, holding all other attributes of the newspaper product constant, must be greater than would be the difference in cost between, say, two newspapers of 100,000 circulation in comparison to one of 200,000 circulation. Thus, the strength of buyer preferences for differentiated products needs to be less pronounced in large cities in order for the necessary market segmentation to take place than would be the case in small cities:

Both the Daily News and the Times can survive in New York City because of the size of the market (although even that is becoming doubtful these days) but, on a per unit basis, the cost of satisfying such differential tastes is higher in the smaller San Francisco market, so a compromise product, the Chronicle, appears.

2

III. Interdependent Demand and Downward Spirals

The discussion of the last section concluded that the number of daily newspapers in a local media market is the resultant of balancing forces. On the one hand, economies of scale persistently exert economic pressure in the direction of fewer newspaper firms. On the other hand, and counterbalancing economies of scale, are the diverse preferences of both reading audiences and advertisers. The two forces result in market segmentation where each surviving newspaper succeeds in finding an audience for which it can successfully differentiate its product, and for which advertisers are prepared to pay sufficient dollars to make the operation profitable.

Most segmentation of American newspaper markets is by locality but, as section one made clear, that has not always been so. The theory of the last section suggested that several kinds of events could lead to the disappearance of directly competing newspapers in a given community, and section four will elaborate. However, it is clear that all of them boil down to reduction of effective market segmentation either among audiences or among advertisers or both. What is not so clear yet is that what goes on in advertising markets strongly effects, and is effected by what goes on in subscription markets.

The purpose of this section is to examine the interdependence of advertiser and subscriber behavior.

A. Structural and Reduced Form Demand Functions

I want to make two points in this subsection: First, events effecting advertiser decisions also effect subscriber decisions, and vice versus, so that one cannot analyze advertising and subscription markets independently. Second, when one takes into account the interdependence of subscriber and advertiser behaviour, it turns out that the responsiveness of both kinds of buyer demand to newspaper firm decisions is much greater than one might suspect. I will make use of some empirical demand functions that I once estimated to illustrate the points made.

Important components of all economic models of firms are representations of the behaviour of purchasers. These representations are called demand functions. Since newspapers sell in two distinct markets, advertising markets and subscription markets, we need to develop at least two demand functions.

One's purpose in developing the subscriber demand function is to characterize, at least as a first approximation, the behaviour of subscribers as it determines the circulation of a newspaper. Consequently, the dependent variable of interest is the quantity of daily circulation. One expects, as a result of economic theory and observation of newspaper markets, that the circulation of a particular newspaper might depend on the subscription price charged, the number of households in the firm's circulation area, the quantity of news-feature space published, the quality of the newspaper product, the amount of promotion carried out for new subscriptions, the extent

of media competition, and a variety of other considerations. Not least among such variables might be the quantity of advertising space published in the newspaper; readers do use newspapers as a source of product information.

The variables mentioned above, and some additional ones as well, are summarized on Table 7. There, the variables are sorted out as to those over which the individual newspaper firm has some direct or indirect control, those which describe the firm's local economic environment, and those that might describe the general health of the national economy.

Just to provide some feeling of concreteness, I have included empirical estimates of elasticities for some of these variables in the second column of Table 9. Each of the elasticity coefficients must be interpreted under the assumption that all other variables are held constant, of course. For example, the elasticity of demand for circulation with respect to subscription prices turns out to be $-.650$; this means that, holding all other variables constant, an increase of 1% in average subscription price for a given newspaper might be expected to reduce circulation by .65%. On the other hand, an increase in the number of households in the community of 1% might be expected to yield a .333% increase in circulation, to interpret another estimate from the table.

Turning to the demand for advertising, the commodity being sold here can be measured in terms of column inches of space. Although advertising markets for newspapers are really quite complex, one expects that the

Table 7

Determinants of Demand for
Subscriptions to a Newspaper

The demand quantity is the number of daily subscribers

The quantity demanded depends on:

Variables controlled or directly influenced by the firm

Price per subscription

Quantity of published news & feature space

Quantity of published advertising space

Quality of the newspaper product

Level of subscription selling effort

Micro-environmental variables

Number of households in the market

Household personal income

Extent of media competition

Macro-environmental variables

The business cycle including changes in GNP,
unemployment rates, the general price level and
interest rates

demand for advertising space might depend on the price charged by the newspaper, by the circulation of the paper, by the level of retail activity in the local community, by the extent of media alternatives available to advertisers, and so forth. Again, a summary listing of such variables appears in Table 8. The first column of Table 9 displays empirical estimates of advertising demand elasticities.

The main point of going through this development, however briefly, is not to persuade you that newspaper markets are complicated (which they are) or that demand elasticities take on particular values (which they probably do not); rather, the point I want to make is that the quantity of advertising sold appears as a variable in subscriber demand, and the size of circulation appears as a key variable in advertiser demand. If we look at Table 9, we see that the elasticity of subscriber demand with respect to the quantity of advertising space published is .468; this means that, holding everything else constant, an increase in advertising space of 1% might be expected to yield about a .468% increase in circulation. Conversely, an elasticity of advertising demand with respect to circulation of 1.60 means that, holding everything else constant, an increase of 1% in circulation can be expected to increase advertiser demand by 1.6%.

While the particular numbers are not important, the fact that they are positive is both important and quite sensible. What they mean is, on the one hand, that readers value newspapers for the advertising they contain, and on the other hand, that an advertiser is more likely to buy

Table 8

Determinants of Demand for
A Newspaper Firm's Advertising Space

The demand quantity is column inches of advertising space

The quantity demanded depends on:

Variables controlled or directly influenced by the firm

Prices of advertising per column inch

Number of subscribers or circulation

Quality of the newspaper product

Availability of rop color

Level of advertising selling effort

Micro-environmental variables

The level of retail sales in the community

The extent of media competition

Macro-environmental variables

The business cycle including changes in GNP,

unemployment rates, the general price level, and

interest rates

Table 9
Empirical Demand Elasticities,
Advertising and Circulation Demand

<u>Explanatory Variable</u>	<u>Demand For</u>	
	<u>Advertising</u>	<u>Circulation</u>
Advertising Prices	-1.60	-
Subscription Prices	-	-.650
Product Quality Index	-.00944*	.0102*
News & Feature Space	-	.651
Circulation	1.60	-
Advertising	-	.468
Rop Color Index	.0393*	-
Number of Households	-	.333
Income per Household	-	-.197
Retail Sales per Household	.394	-
Index of Media Competition	-.169	-

* Semi-elasticities.

Source: "Estimating cost function parameters without using cost data: Illustrated Methodology," J. N. Rosse. Econometrica, March 1970, pp. 266-268.

space if the newspaper circulation is larger. The result is that advertiser behaviour depends on subscriber decisions, and subscriber decisions depend, in turn, on advertiser decisions; this is what I mean by demand interdependence.

Demand interdependence, it turns out, has profound implications. Consider, for instance, the controlled experiment carried out in Table 10. The only change we want to make is to increase subscription prices by 10%. We know from Table 9 that a 10% increase in subscription price will yield about a 6.5% decline in circulation, holding everything else constant. However, everything else cannot be held constant, for as circulation declines, demand for advertising will decline. Thus, using an elasticity of advertising with respect to circulation figure of 1.60, the 6.5% decline in circulation will yield about a 10.4% decline in advertising sales. However, if advertising declines, then circulation will decline still more; for, the elasticity of circulation demand with respect to the quantity of advertising published is .468 from Table 9. Hence, the 10.4% decline in advertising sales will yield an additional 4.88% decline in circulation. Table 10 carries out such calculations through three rounds.

The fact that we calculated the effects of interaction in successive "rounds" is of no particular significance. In reality, of course, the algorithm used by advertisers and readers to make their decisions would be quite different. Nor are the particular numbers of importance. What is important is the effect of interdependency between advertising and circulation markets.

Table 10
Taking Demand Interaction Into Account

Suppose one could conduct a controlled experiment in which subscription prices were increased by 10% from initial values.

Suppose both circulation demand and advertising demand were allowed to vary as a result of the price increase, but that all other variables (including general inflation) except the three in question were held fixed at their initial values.

Using the partial elasticities of demand from Table 9, the first order effect would be

$$A \cdot -.650 \times 10\% = -6.5\% \text{ change in circulation}$$

The second order effects would be

$$A \cdot 1.6 \times (-6.5\%) = 10.4\% \text{ change in advertising sales, and}$$

$$A \cdot .468 \times (-10.4\%) = -4.88\% \text{ additional change in circulation}$$

The third order effects would be

$$A \cdot 1.6 \times (-4.88\%) = -7.81\% \text{ additional change in advertising sales, and}$$

$$A \cdot .468 \times (-7.81\%) = 3.66\% \text{ additional change in circulation}$$

Fourth and higher order effects could be calculated through third order effects only,

$$\begin{aligned} \text{Circulation would have changed by } & -6.5 - 4.88 - 3.66 = -15.04\% \\ \text{advertising space sold would have changed by } & \\ & -10.4 - 7.81 = -18.21\% \end{aligned}$$

The demand functions that we have been talking about so far are called "structural form" models of demand. Structural forms are simply models that attempt to describe directly the behaviour of important components of economic reality. The problem of structural form newspaper demand functions is that the interdependency of advertising and subscriber demand makes them very hard to interpret and to manipulate. Just as one can take any two equations each involving two unknowns and solve them to obtain two equations which each involve only one of the unknowns, one can take our two structural form demand functions and derive reduced form demand models. The effect of variation in circulation has been netted out of the reduced form advertising demand function, and, similarly, the effects of changing quantities of advertising space have been netted out of the reduced form subscription demand function. As a result of the process by which they are derived, each reduced form demand function has all of the explanatory variables that appear in either of the two structural form demand equations.

Empirical estimates of reduced form demand elasticities for both advertising and circulation demand functions appear in Table 11. They are included here for two reasons: first, they may be of interest in their own right. Second, they illustrate rather dramatically the effect of taking advertiser and subscriber demand interdependence into account. For instance, the reduced form elasticity of subscription demand with respect to the

Table 11

Measured Percentage Responsiveness of Sales

-6.37	-2.99	Advertising Prices
-4.14	-2.59	Subscription Price
.027*	.050*	Product Quality Index
4.14	2.59	News and Feature Space
.16*	.072*	Rop Color Availability
2.11	1.31	Number of Households
-1.27	-.78	Income per Household
1.55	.72	Retail Sales per Household
-.68	-.31	Index of Media Competition

* semi-elasticities.

Source: Reduced form estimates derived from the structural estimates reported on Table 9.

number of households located in the firm's market is 1.31; that means that an increase of 1% in the number of households in a firm's market might be expected to increase the firm's circulation by 1.31%, holding everything else constant. The fact that circulation increases faster than households can be explained by the fact that larger circulation leads to more advertising sales, which in turn lead to more subscription sales, which in turn lead to more advertising sales, etc. It is no wonder that newspapers tend to be growth oriented! The wonder is that they are not more growth oriented than they are.

Before leaving Table 11, I would like to call your attention to two other matters. First, we can now see what the total effect of the process described in Table 10 might be if carried to its logical conclusion. A 10% increase in subscription prices might be expected to yield a 25.9% decline in subscription total, and a 41.4% decline in advertising, holding all other variables constant. This is, of course, a "controlled experiment" result, one that would be impossible to realize in actual newspaper operations. Secondly, note that each of advertising price and subscription price now appears in both reduced form demand equations; this is an additional reflection of the fact that subscriber and advertiser demands are interdependent.

B. Downward Spirals

The interdependence of the newspaper firm's two markets--advertising and subscriptions--is the source of what is sometimes called the "infamous downward spiral." It is this effect that makes being the "junior paper" (smaller circulation paper) in a two paper market precarious. This is also the effect which sometimes accounts for the demise of newspaper competition among quite large newspapers even when differences in circulation are apparently small.

To develop the logic of this spiral, suppose that a particular newspaper's advertising demand curve were shifted inwards by 10%. What I mean by that is that if price and all other variables that effect newspaper demand were held constant, the firm would now sell 10% fewer advertising inches than it previously sold. The precipitate cause of such a shift might well be the cumulative effects of a recently founded television station, for instance.

The question is, what would be the total result of such a decrease in advertising demand? In order to answer, we need to conceptualize a controlled experiment like that developed in Table 10. We have postulated a 10% downward shift in advertising demand, which means, everything else the same, that the quantity of advertising space published has dropped by 10%. But if advertising publication drops by 10%, then circulation will drop by $-10\% \times .468 = -4.68\%$. If circulation declines, there will be a

further decline in advertising sales, still holding prices and all other variables except circulation and advertising fixed; the second round drop in advertising sales will be $-4.68\% \times 1.6 = -7.50\%$ added change in advertising sales. This decline in advertising will induce a further decline in circulation, etc.

But demand effects are only part of the story. Because of economies of scale, as circulation and sale of advertising decline, the unit costs of the enterprise must increase. This means either higher prices or lower quality or else loss of profitability. Since the ability of a firm to absorb losses is limited, eventually the spiral forces higher prices and/or lower product quality. This, of course, compounds the downward spiral effect initiated in the demand functions.

Hence, the existence of scale economies and of interdependent demand means that an autonomous shift in one of the demand functions can have "multiplier" effects on both demand quantities and on profitability.

Of course, the phenomenon works in reverse as well. In strongly growing markets, or where newspapers have been able to break old patterns and prejudices, an upward spiral may take off. The Los Angeles Times in the early 60s and the San Jose Mercury-News in the 70s are examples of such upward spirals.

Spirals in either direction are limited. An upward spiral is limited by the size of the market and by the entry of competitive media. If a growing market is profitable for the daily newspaper, it will also be profitable for weeklies, TV, shopping guides, billboards, radio, direct mail, etc.

The effect is not quite symmetric, however. While it is true that if a market is not profitable for a daily newspaper, then it is probably not profitable for at least some other media, but the spiral may operate very quickly on a junior newspaper. The newspaper may be the first to go out of business because it may produce the only product that has very close substitutes, the product of the senior newspaper.

Historically, many downward spirals have been initiated by the realization by advertisers, and even sometimes by publishers and readers, that two newspapers were now competing for a single audience segment. Put another way, economic evolution may have occurred such as to reduce the ability of a previously segmented market to support two newspapers. The scenario, usually taking place in a matter of a few years goes something like the following: the junior paper begins to lose advertising to the senior paper. The junior paper's slight deficit in daily circulation begins to grow. At first with calm deliberation, but then in desperation, the junior paper begins to promote its circulation and to experiment with editorial changes. The circulation loss is slowed but not stopped, and advertising continues to shift from the junior paper to the senior paper and to other media. The junior paper begins to lose money, and financial losses begin to grow at an accelerating rate. The senior paper, almost without effort, grows larger and more profitable. If the junior paper is owned by a newspaper chain, it may have a "deep pocket" so that the working out of the spiral takes some time. Otherwise, there may be a fairly quick resolution

with the junior paper being merged into the senior paper. There are almost never complete failures in these circumstances, only mergers. Nowadays, the result is an application to the Justice Department for permission to form a joint operating company under the provisions of the Newspaper Preservation Act.

IV. Causes

It is easier to identify the economic principles at work in the decline of newspaper competition than it is to look at economic reality and put your finger on any single cause or event. In reality, there is seldom a single explanation when newspapers fail; rather, a number of fundamental economic forces conspire with a precipitating event to bring down previously healthy firms. Sometimes the precipitating event may be a lengthy strike, it could be a change to ineffective management, economic recessions sometimes play a role, or it may be a sudden loss of industry or commercial activity in a given newspaper market. The precipitating events are usually short-run phenomena--here we are interested in the more influential long-run forces at work.

The fundamental long-run cause, I have argued, is loss of effective newspaper market segmentation. Effective segmentation could disappear for a variety of logically distinct reasons. I want to discuss each of them. It will facilitate discussion to begin by assuming full market equilibrium. What I mean by this is the successful segmentation of multiple newspaper markets in a community with no incentive to entry or exit either for newspapers or for other competitive media. Consequently, all suppliers to the market will be earning a competitive rate of return on investment. In other words, a Chamberlinian large group competitive equilibrium exists.

The existence of such an equilibrium, at least with respect to newspapers, has been subjected to empirical test by myself and John Panzar ("Chamberlin vs. Robinson: An Empirical Test for Monopoly Rents," Studies in Industry Economics Discussion Paper, Department of Economics, Stanford). For the typical newspaper firm in the post World-War II era, at least, the possibility of monopoly rents due to market imperfections can be overwhelmingly rejected by valid statistical tests.

I turn now to a compendium of possible causes for the disappearance of successful newspaper market segmentation.

1. A downward shift in advertising demand--because of economies of scale, a reduction of demand for advertising will put upward pressure on prices. But higher prices always weaken effective market segmentation. In this case, it is easy to see; with two papers of sufficient size, prices per page per subscriber may be low enough that both are able to sell enough advertising to survive. Suppose television enters with the effect of shifting the newspaper's demand function inwards. Both newspapers lose advertising, both find it necessary to price higher on a per space per reader basis, this leads to still smaller sales of advertising, with all of the effects of the spiral discussed before. But the point is, in the second instance here, prices are raised to a point where segmentation of advertising markets tends to break down; in effect, advertisers continuing to purchase could only afford to buy in one paper.

TABLE 12

PRINT AND ELECTRONIC MEDIA, 1935 - 1975

Year	Newspapers		Periodicals		Commercial Stations		Percent of Households with TV
	Daily	Other	Weekly	Other	Radio	TV	
1935	2,197	11,894	1,484	5,062	na	-	-
1945	2,004	10,787	1,359	5,210	na	-	-
1955	1,860	9,555	1,602	6,046	2,742	437	67%
1965	1,843	9,540	1,716	7,274	4,279	588	92
1975	1,819	9,581	1,918	7,739	5,245*	692*	96*
Percent Change,							
1935-75	-17%	-19%	+29%	+53%	-	-	-
1955-75	-2%	0%	20%	+28%	+91%	+58%	+43%

* 1973 figures for radio and TV stations, 1970 figure for percent of households with TV.

Source: Statistical Abstracts

The growth of television in the post World War II period scarcely needs to be documented. Its direct effect on newspapers is more difficult to quantify, however. I have estimated reduced form revenue functions for newspapers that indicate that each 1% increase in TV's share of aggregate advertising expenditure shifts the equilibrium advertising revenues of a typical newspaper firm downwards by nearly 1%. ("The Daily Newspaper Firm: A Twenty-Four Equation Reduced Form Model." Studies in Industry Economics Discussion Paper, Department of Economics, Stanford.) On a less formal basis, it is clear that television advertising is a cost effective competitor for regional and national advertising where every viewer is valuable to the advertiser. Consequently, the importance of national advertising to newspapers has declined significantly. Even more importantly, large city newspapers have been affected more than have been small city newspapers since large city newspapers were and are more dependent on national and regional advertising than are small city newspapers. More recently, with the proliferation of active TV licenses in metropolitan areas, TV stations have become effective competitors for local display advertising as well.

In an earlier era, radio played much the same role as television has in more recent times. The development of national news magazines also had an effect. More recently, the proliferation of suburban and neighborhood shopping guides and weekly newspapers has had some effect. In the future, cable television may become an effective competitor of newspapers in local advertising markets.

TABLE 13
PERCENT OF U.S. ADVERTISING EXPENDITURE
ACCOUNTED FOR BY SELECTED MEDIA

Year	Newspapers	Magazines	Television	Radio	Direct Mail
1940	38.6%	8.8%	-	10.2%	15.8%
1950	36.3	8.4	3.0%	10.6	14.1
1960	30.8	7.6	13.6	5.8	15.3
1970	29.2	6.6	18.4	6.7	14.1
1977	29.1	5.7	20.1	6.8	14.1
Percent Change, 1950-77	-20%	-32%	+570%	-36%	0%

Source: McCann-Erickson, Inc., time series of advertising expenditure from issues of Advertising Age.

The acute reader might well note that the economy as a whole, and newspaper markets in particular, have grown quite steadily throughout the five and one-half decades under consideration here. Hence, it is not obvious that the new media have really shifted newspaper demand functions downwards. What the logic used here means is that the number of newspapers has not grown by very much in spite of upward shifting of aggregate demand for advertising. Growth of aggregate demand has been more than offset by new media and their added competition. What has happened is that we now have fewer newspapers than we would have had had it not been for the growth of alternative media. The growth of alternative media has also bled off advertising for which the other media had a comparative advantage. The brand identification advertising of television is not so well suited for newspapers, nor, for example is the hobby oriented advertising found in specialty magazines. The development of yellow pages in telephone books drained another specialized advertising market away from newspapers. The effect has been to leave newspapers with a more homogeneous set of advertising clients, a set for which less effective market segmentation exists.

The last effect mentioned verges close on a second, logically distinct, cause of weakening market segmentation. That is, the weakening of advertiser preferences for differentiated audiences. What I have in mind here is the development of chain stores and group advertising for large numbers of local retail outlets. I have not attempted to measure this change in retailing behaviour, but it is quite apparent in metropolitan areas;

the automobile makes distances small, and modern retail management and merchandising makes possible chains like Safeway, National Tea, Sears, and Macy. This is like the Northside and Southside grocery stores becoming part of a chain in the little example developed in Section III-B. I will record this phenomenon as

2. The weakening of advertiser preferences for differentiated audiences.

3. A downward shift in subscriber demand--the logic is much the same here as in the downward shift of advertising demand. The result, we know, will be an increase in price and/or a decrease in product quality because of the effects of economies of scale. As price increases, readers may be less willing to pay a premium for a differentiated product, such as the New York Times or the Daily News and more willing to accept a compromise product such as the San Francisco Chronicle.

It is difficult to track down, and even more difficult to measure, shifts in subscription demand. There are so many variables that effect the readership of newspapers that it is quite difficult to identify or separate out individual causes. It is certainly true, however, that the readership of newspapers on a per household basis has declined substantially over the last three decades. This may be largely the result of the disappearance of competition in the largest metropolitan centers, but the exact cause must remain somewhat ambiguous at this point in time.

More generally, it is easy to argue that the time demands for watching TV, TV as an alternative source for news and entertainment, the development of news magazines, the development of new recreational outlets and the magazines that go with them, the growth of professional sports, and changing demographics, all conspire to effect the amount of time and/or resources that households may be willing to spend acquiring newspapers. All of these causes tend to suggest downward shifts in the subscriber demand function.

At the sametime, the growth of alternative media, many of which provide specialized kinds of information and entertainment for households, have left newspapers with a sort of "residual" role in the information and entertainment field -- a sort of public utility catalogue of daily news, features, and information. For instance, whether a newspaper happens to be Republican or Democrat on its editorial pages matters considerably less now than it did in an earlier era. The reason may be because other partison media are available to satisfy reader interests, or it may be that the reading public is less concerned to have its prejudices reflected in its newspaper. In any event, this phenomenon deserves to be identified as a fourth independent cause for declining newspaper segmentation,

4. Weakened reader preferences for tailor-made newspaper products.

The suburbanization of America during the 1950s and 60s can be argued to have had both a type 3 and a type 4 effect on newspaper market segmentation. The movement of audiences to suburbs resulted in a downward

shift of subscriber demand for the center city newspapers; everything else the same, this means that the market segmentation needed to maintain direct competition in metropolitan centers was weakened. At the same time, audiences for suburban papers were created. Those suburban audiences tended to be both smaller and considerably more homogeneous than prior city audiences had been. Consequently, it is not surprising to discover that suburban newspapers are rarely confronted with direct newspaper competition.

5. Increasing costs--an upward shift in cost would necessarily result in upward pressure on product prices. As we have seen before, increasing prices can reduce the effectiveness of newspaper market segmentation.

Newspaper labor unions are often singled out as culprits in rising newspaper costs. It is true that costly strikes some times precipitate newspaper failures, but I would argue that such failure is due to other cause and probably would have occurred sooner or later anyhow. Table 15 shows that newspaper hourly wage rates increased very little over 1% per year in constant dollar terms in the post-war era. It is unlikely that this rate of increase exceeded by much, if any, the rate of increase in manpower productivity. However, to the extent that newspaper unions have succeeded in slowing down the introduction of cost saving and/or product improving technology, their effect on costs may have been more serious.

TABLE 14

Daily Circulation by City Size 1948-73

<u>Year</u>	<u>(000) City Size</u>	<u>Total</u>	<u>< 10</u>	<u>10 - 99</u>	<u>100 - 500</u>	<u>500 - 1000</u>	<u>> 1000</u>
1948		51,345	1,676	13,280	13,908	8,533	13,947
1958		57,209	1,753	15,594	16,594	10,255	13,013
1968		60,817	1,741	18,113	17,957	11,052	11,955
1973		61,285	1,758	19,728	17,460	10,950	11,389
% Change 1948-73		19.4%	4.9%	48.6%	25.5%	28.3%	-18.3%

Number of Firms

1948	1,536	451	881	137	37	30
1958	1,545	409	927	137	44	28
1968	1,547	365	975	151	34	22
1973	1,566	333	1,030	149	33	21
% Change 1948-73	2.0%	-26.2%	10.9%	8.8%	-10.8%	-33.3%

Source: Rosse, Owen Dertouzos, "Trends in the Daily Newspaper Industry, Studies in Industry Economics #57, Stanford University, 1975.

Table 15

NEWSPRINT PRICES AND AVERAGE WAGES OF NEWSPAPER WORKERS,
1950 - 1977

Year	Newsprint Prices		Average Hourly Wages	
	<u>\$Current</u>	<u>\$1958</u>	<u>\$Current</u>	<u>\$1958</u>
1950	\$101.63	\$126.72	\$1.98	\$2.47
1960	134.40	130.11	2.88	2.79
1970	150.50	111.32	4.23	3.13
1971	153.71	108.55	4.60	3.25
1972	163.19	111.70	4.97	3.40
1973	170.32	110.38	5.15	3.34
1974	210.72	123.81	5.46	3.21
1975	256.45	137.95	5.87	3.16
1976	276.23	141.22	6.30	3.22
1977	300.31	145.22	6.67	3.23
Percentage Change,				
1950-1977	195%	15%	237%	31%
1970-1977	100%	27%	58%	3%

Sources: Survey of Current Business and Employment and Earnings

Actually, increasing prices for newsprint may have had more effect, particularly in the late 40s and early 50s when the real price of paper rose rapidly, and in the post 1971 period when a rapid increase has again occurred. Between 1955 and 1971, the constant dollar price of newsprint actually declined, probably keeping some newspapers in business that would otherwise have disappeared.

6. Changes in scale economies--if changing technology or changing in input prices caused the advantages of large-scale firms relative to small-scale firms to change, one might expect the effectiveness of newspaper market segmentation to be altered. In a previous article, I found empirical evidence that newspaper scale economies remained stable at least from the mid-1930s to the mid-1960s ("Daily Newspapers, Economies of Scale, and Monopolistic Competition" American Economic Review, May 1967). More recent work confirms that stability at least in the post World War II era. However, changes in technology since the mid-1960s have been more important.

The introduction of electronics to newspaper production has greatly lowered the "first copy" costs of preparing content. Since this reduces the fixed cost to be amortized over circulation, the effect is to reduce the relative cost of differentiated or "tailor-made" newspaper products. The new technologies can be expected to increase the probability of successful market segmentation.

However, it should be noted that both the increasing price of newsprint and the "first copy" cost reduction of the new technologies are effects that make the smaller suburban newspapers more serious competitors of the center city press. Hence, the new technology may improve the chances of competition in any given city, but reduce the chances that a regional paper can survive.

This completes the compendium of probable causes. It seems to me that the competition of new media for newspaper advertising and reader attention, changes in patterns of retailing and retail advertising, and the suburbanization of newspaper markets have been the most important forces in reducing effective newspaper market segmentation and, hence, in the decline of direct newspaper competition.

V. What Now?

The evolution of newspaper competition is nearly complete. There are so few cities left with direct newspaper competition as to make a preservation policy seem nearly (but not completely) vacuous.

It is often the case that when one understands why economic events occur, one's willingness to advocate policy actions may be weakened by a clearer view of causes and consequences. In this case, if a principal cause has been the multiplication of competing media--alternative and competing information sources--then one wonders if there really is any public policy problem.

For myself, I prefer not to think in terms of "policy problems." I do not think there is a crisis in the American Newspaper Industry. However, I always have and presently do think that there are things that can be done to improve the economic performance of the press. Let me turn to some of them now.

I think that the most important improvement needs to come from within the industry. Newspaper publishers, editors, and managers have been hypnotized by their own words into thinking that they have some special place in the market place. For this and other reasons, the usual approach of newspapers to the business of management is positively antediluvian. This is not universally true of individual personnel or newspapers, and increasingly one finds better and more knowledgeable management. But unless the industry wakes up and quits tilting with windmills,

it will soon find itself relegated to the museum. My more journalistically or politically inclined policy analyst friends may take exception to this advice, but I would reply that one cannot have a free press unless it is economically successful. Vigorous and effective management is more likely to preserve newspaper competition than all of the public policy we are likely to conceive.

There are a variety of things that could be done ranging from the encouragement of real professional development programs within firms or chains, within the industry, and in educational institutions to the institutionalization of real, high quality research programs within the industry to constructive and imaginative programs for improving and sharing local distribution systems and local production facilities. But, the thing that mainly needs to be done is to get the industry to think of itself as a vigorous competitor rather than as a sacred cow.

The fostering and furtherance of the present era of vigorous technological improvement would be my second priority. New newspaper technologies are all ready proving that they can reduce "first copy" costs to the point where real newspaper competition may recur. These technologies may even make possible the kind of vertical separation that now exists in the magazine industry, where remote printing plants and distribution systems serve many independent editorial and advertising content producing agencies. Such vertical separation reduces the importance of scale economies and makes possible finer segmentation of audiences and, therefore, more competing newspapers.

In each of the above recommendations, direct public policy interference is probably neither useful nor desirable even though indirect action may be possible, as encouraging research and educational programs, for instance. There are, however, some areas where direct public action could be fruitful.

The remaining directly competitive newspapers need to be kept both healthy and competitive as long as possible. I would favor vigorous use of the provisions of the Newspaper Preservation Act to achieve both objectives while urging that the regulatory burden imposed on newspapers be kept as small as possible. Even with the large chains that now exist, newspaper enterprises are still not big businesses.

The markets for news and feature content represent opportunity areas for both public and private policy. As the importance and economic strength of big city newspapers continues to decline, syndication markets must become more successful if the supply of new and important commentators and high quality features is to be maintained. I would like to see a larger, stronger, more vigorously competitive industry supplying a larger volume of syndication and wire services. I do not really understand how and why these markets work the way they do, and I do not think anyone else does either. I have never understood why territorial exclusivity was so important, for instance, or what it would take to make more than one major wire service successful. I think these markets are crucial to the future evolution of newspapers, and would urge that some resources be devoted to

understanding how the markets work and how their institutions might be structured to improve economic and social performance. Some recent developments in the economic theory of public goods and their provision may be helpful.

Almost any policy that improves the possibility of media market entry is desirable, and policies that erect barriers to entry are generally suboptimal from society's standpoint. Since newspapers are a delivered product, their distribution systems can play an important role in fostering or preventing entry. For instance, consider public policies that permit or encourage independent local distributors willing to distribute any newspaper locally that wants circulation there and for whom sufficient demand exists. Such a policy would reduce barriers to entry and foster newspaper competition since a potential entrant would not need to establish his own distribution system in order to gain circulation (see Section II-A for a discussion of economies of scale and distribution).

Unfortunately, such distribution systems are presently not possible precisely because of mis-informed public policy. The Albrecht decision of the Supreme Court finds vertical price fixing by newspapers of subscription rates to be a violation of the Sherman Act. But, from the standpoint of a newspaper firm, a profit maximizing price for subscriptions must take into account the effect of circulation changes on advertising sales. From Section III-B, we know that a profit maximizing subscription price will be one so low that subscriber demand is quite

inelastic with respect to price. Hence, if a distributor has the independent right to set price, he or she will want to increase subscription prices above those that a newspaper would like to set. This, in turn, impacts on advertising sales and back on circulation, and so forth in a familiar pattern. It is not hard to find realistic circumstances in which subscribers, distributors, advertisers, and the newspaper itself are all worse off because of the distributor's right to set price independently. In any circumstances, subscribers and advertisers (because of higher prices) and publishers (because of lower profits) are always made worse off.

Knutsen vs. Daily Review finds that offering distributors employment so as to provide internal control of subscription price is a reasonable act, at least for newspapers whose legal situation is similar to that of the Daily Review. Other pending cases are likely to develop this case law further, but it seems unlikely that a private action will carry the development far enough. What is needed is to educate the Court as to the importance of independent, arms-length distribution systems, and then to convince the Court that an exception to the Albrecht precedent is needed to permit their existence.

Turning to other matters, I worry about the growth of newspaper chains, but not as much as many of my colleagues concerned with newspaper policy. To the extent that they are the engines of better management and technological progress, I am an enthusiastic admirer. To the extent

that they exist to permit successful intergenerational transfer or to shift income from today's personal income tax to tomorrow's capital gains, I worry a bit and wish Congress could invent better schemes of taxation. To the extent that they are the vehicle of personal ambition, I worry, but my worry has its basis not in economics but in my concern as a private citizen. On the whole, I would urge vigilance, for the potential for abuse is present. On the other hand, if it takes chains and conglomeration to bring the newspaper business into the last quarter of the twentieth century, then it is a price that I am prepared to pay.

Finally, I can find little or no justification for the cross-ownership of the principal newspaper, TV, and CATV media in a single local market. I do not have strong objections to cross-ownership, per se, but the geographical markets for all three media are sufficiently small and the cost benefits from joint operation so negligible that forbidding local cross-ownership should impose little or no real harm while protecting the public from substantial potential abuse.

I will defer discussion of other possible policy issues to another time and place.